

09/729,513

E0802

MARKED-UP VERSION OF ALL PENDING CLAIMS

This listing of claims will replace all other versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A system for repairing defects in a semiconductor substrate, comprising:
 - a scanning probe microscope ~~having~~ that has a measuring tip and a scribing tip; and
 - a defect repair system;
 - ~~wherein the defect repair system that~~ repairs defects in a substrate via application of a first voltage to the scribing tip and a second voltage to the substrate at a location determined by the scanning probe microscope;
 - wherein defect location(s) and the substrate itself are mapped into a grid, each portion of which corresponds to an XY position.
2. (Cancelled)
3. (Currently Amended) The system of claim 1 ~~2~~, wherein the defects are mechanically removed from the substrate using the ~~detection~~ scribing tip.
4. (Original) The system of claim 3, wherein the scanning probe microscope is an atomic force microscope.
5. (Currently Amended) The method of claim 4, wherein the scribing tip of the scanning probe microscope has a diamond tip.
6. (Cancelled)

09/729,513

E0802

7. (Currently Amended) The system of claim 1 6, wherein the voltage difference causes defects to be oxidized away.

8. (Currently Amended) The system of claim 1 2, wherein the defects are repaired by heating the ~~detection~~ scribing tip.

9. (Original) The system of claim 1, wherein the system locates defects by obtaining both topographical and compositional information concerning the substrate.

10. (Original) The system of claim 9, wherein the system creates an electrostatic charge in a portion of the substrate.

11. (Currently Amended) The system of claim 1, wherein the ~~defect-repair system~~ measuring tip has fixed position relative to the ~~detection~~ scribing tip of the scanning probe microscope.

12. (Original) The system of claim 1, wherein the defect repair system receives a defect map generated using the scanning probe microscope.

13. (Currently Amended) A system for repairing defects in a semiconductor substrate, comprising:

a scanning probe microscope that has a measuring tip and a scribing tip;

and

means for selectively processing the semiconductor substrate to repair defects at locations on the semiconductor substrate determined by the scanning probe microscope;

means for applying a first biasing voltage to the scribing tip and a second biasing voltage to the semiconductor substrate; and

means for mapping the semiconductor substrate and defect locations thereon in a grid pattern.

09/729,513

E0802

14. (Currently Amended) A method of repairing a defect in a semiconductor substrate comprising the steps of:

locating the defect via employing a measuring tip of using a scanning probe microscope;

mapping the defect location to XY coordinates in a grid map of the semiconductor substrate; and

repairing the defect at using the location determined by the scanning probe microscope measuring tip via employing a scribing tip, wherein a first biasing voltage is applied to the scribing tip and a second biasing voltage is applied to the substrate.

15. (Cancelled)

16. (Currently Amended) The method of claim 14 15, wherein the defect is mechanically removed from the substrate using the ~~detection~~ scribing tip.

17. (Original) The method of claim 16, wherein the scanning probe microscope is an atomic force microscope.

18. (Currently Amended) The method of claim 17, wherein the scribing tip of the scanning probe microscope has a diamond tip.

19. (Original) The method of claim 16, wherein the defect is removed by forcing the tip against the substrate with a normal force that is at least about ten times greater than the normal force applied to detect the defect.

20. (Cancelled)

21. (Currently Amended) The method of claim 14 20, wherein the voltage difference causes the defect to be oxidized away.

09/729,513

E0802

22. (Currently Amended) The method of claim ~~14~~ 15, wherein the step of repairing the defect comprises heating the ~~detection~~ scribing tip.

23. (Original) The method of claim 14, further comprising the step of determining the approximate location of the defect with another instrument prior to the step of determining the defect's location using the scanning probe microscope.

24. (Original) The method of claim 14, wherein the step of locating the defect comprises obtains both topographical and compositional information regarding the substrate.

25. (Original) The method of claim 24, wherein the step of locating the defect comprises creating an electrostatic charge in a portion of the substrate.